

**CHEMICAL MECHANICAL POLISHING SLURRY
AND PROCESS FOR RUTHENIUM FILMS**

ABSTRACT OF THE DISCLOSURE

5 A CMP slurry for ruthenium and a polishing process using the same. In a process technology below 0.1 μm , when a capacitor using a $(\text{Ba}_{1-x}\text{Sr}_x)\text{TiO}_3$ film as a dielectric film is fabricated, the slurry is used to polish a ruthenium film deposited as a lower electrode according to a CMP process. The CMP process is performed by using the slurry, to improve a polishing speed of ruthenium under a low polishing
10 pressure. In addition, the CMP process is performed according to an one-step process by using one kind of slurry. As a result, defects on an insulating film are reduced and a polishing property is improved, thereby simplifying the CMP process.